

National Aeronautics and  
Space Administration



# EXPLORE SCIENCE

## Exploration Science Strategy and Integration Office: Commercial Lunar Payload Services

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# Commercial Lunar Payload Services (CLPS)

- CLPS is an innovative, service-based, competitive acquisition approach that enables rapid, affordable, and frequent access to the Lunar surface via a growing market of American commercial providers
- The CLPS contract is an indefinite duration indefinite quantity (IDIQ) contract awarded to 14 domestic teams who are all eligible to bid for Task Orders
- Service task orders are firm fixed price (FFP) for the full scope of delivery: from payload hand-over to delivery (and often operation) on the lunar surface
  - All payload requirements must be captured in the originating Request for Task Order Proposal (RFTOP)
- NASA wants to be one of many customers for CLPS services
- CLPS deliveries are CLPS Provider missions (not NASA missions)
- CLPS systems/facilities are owned or contracted by the CLPS Provider (not NASA)
- CLPS launches are commercial launches provided via the CLSP provider (not LSP) and approved/licensed by the FAA and other agencies (not NASA)

A vertical decorative strip on the left side of the slide features a space-themed illustration. It includes a bright yellow sun at the bottom, a blue and white Earth horizon, a grey cratered moon, a reddish-brown Mars, and a yellow Saturn with its rings at the top, all set against a dark blue starry background.

## CLPS Payload Services

- CLPS payloads are customer-owned, delivered items.
  - Transfer of custody, but not ownership
- CLPS Providers responsible for the safe integration, delivery, deployment and/or operation of payloads
  - Accommodation of payload interface, operation, and environment requirements
- CLPS Providers secure all necessary hardware, systems, facilities and services to perform the delivery
  - LSP is not engaged in their launch vehicle acquisition
  - DSN (if required by CLPS contractor) is acquired by CLPS Contractor via RSAA
- Service tasks may include:
  - Physical operation of a payload (i.e., command/data/power)
  - Payload release/deployment with or without wireless/tethered services
  - Passive delivery (e.g., laser reflectors, EPO items)
  - Delivery directly into specified lunar orbit



# CLPS is not the same as Rideshare

## Rideshare deployment:

- Deployed from the launch vehicle or launch vehicle element (such as a kick stage or propulsive “tug”) as part of the “launch” of a primary mission.
- Rideshare would provide deployment on an earth-orbiting, translunar injection (TLI), or other escape vector.
- Post TLI cruise, maneuvers, and lunar orbit insertion (LOI) would be responsibility of the payload.

## CLPS on-orbit delivery:

- Deployed into specified lunar orbit.
- CLPS vehicle provides services (power, comm, etc), maintains specified environments, and performs all maneuvers through lunar orbit deployment.





# Payload Accommodations

CLPS intends to procure commercial landers via firm fixed price awards. While providers are required to “accommodate” the needs of NASA payloads, payloads should not expect to ‘redesign’ the lander

- Paradigm shift to specify NASA requirements up front. Commercial systems may not be able to meet all payload requests at an acceptable price.
- Utilities: power, data, commanding, etc.
- Mounting: fields of view, alignments, co-locations, etc.
- Environments: thermal, vibe, emi/emc, etc.
- Operations: conops, mission phases, etc.
- CLPS Task Orders are generally awarded competitively
  - Payloads should therefore not be designed toward a specific CLPS provider.
- Firm Fixed Price (FFP) Task Orders necessitate stable definition of interfaces and requirements PRIOR to release of the Request for Task Plan (RFTP).
  - If it is not defined in the RFTP then it is defined de facto by the CLPS provider, or else is a “new” requirement at a cost.
  - If requirements cannot be finalized, RFTP should specify an achievable envelope for both sides to work to.

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# Affordable Accommodation

- CLPS deliveries themselves are most affordable when payloads are “easily accommodated”, but affordability and value principles apply to both the payloads and CLPS providers.
  - Existing payloads, build-to-print, or heritage designs should generally maintain their established requirements & configurations.
  - Where payload design decisions are open, payload accommodation requirements should be driven by payload objectives while avoiding exotic, outdated, or demanding accommodations.
  - Restraint/elimination of optional “normally available” capabilities can aid affordability.
- ESSIO has an interface guidance package help payloads support an affordable integration and delivery. See any ESSIO personnel to arrange a briefing.

# CLPS Competitive Field



**If you seek to be a NASA-funded payload,** do not take any actions that may preclude a fair CLPS competition for delivery! Contact the NASA CLPS Office or a CLPS Program Executive for guidance.

# CLPS Current Portfolio

- Competition open to U.S. commercial providers of space transportation services, consistent with National Space Transportation Policy and Commercial Space Act
- Structured for NASA as one of many customers of commercial service
- On ramps to the CLPS contracts will be used to provide additional capabilities as made available
- 14 domestic companies eligible to compete for Lunar surface delivery task orders
- 6 awarded lunar surface deliveries actively in work with initial deliveries as soon as November 2021.

## First Round CLPS companies (Nov 2018):

- Astrobotic
- Deep Space Systems
- Draper
- Firefly Aerospace
- Intuitive Machines
- Lockheed Martin Space
- Masten Space Systems
- Moon Express
- Orbit Beyond

## First On-Ramp (Nov 2019):

- Blue Origin
- Ceres Robotics
- Sierra Nevada Corporation
- SpaceX
- Tyvak Nano-Satellite Systems, Inc.

TO2 2022  
Astrobotic  
Peregrine



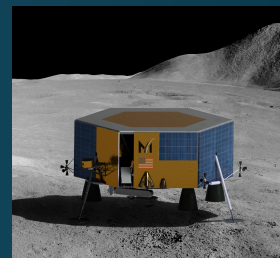
TO2/20C 2022  
Intuitive Machines  
NOVA-C



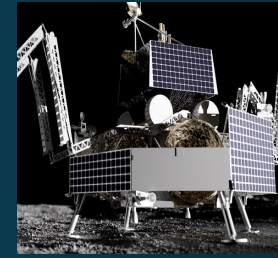
TO PRIME-1 2022  
Intuitive Machines  
NOVA-C



TO19C 2023  
Masten  
XL-1



TO20A 2023  
Astrobotic  
Griffin



TO19D 2023  
Firefly Aerospace  
Blue Ghost







# EXPLORE MOON *to* MARS

MOON LIGHTS THE WAY

